3 or 4 weeks before HSCT and continued until discharge. All microbes including normal flora were specified and their susceptibility profiles to antimicrobial agents were examined. The sensitivity for the surveillance culture was defined as the rate of detecting microbes identical to pathogens of septicemia from throat or feces at least 1 week before the development of septicemia.

**Results:** Causative pathogens were gram-positive cocci (GPC) in 19, gram-positive rods (GPR) in 5, and gram-negative rods (GNR) in 16 episodes. The sensitivity for surveillance cultures in detecting causative pathogens of septicemia prior to the development of septicemia was 42.5% (17 of 40) in all episodes. The sensitivity was 73.7% (14 of 19) in the septicemia due to GPC, which was significantly higher than that due to GNR (18.8%; 3 of 16, $p < 0.01$).

**Conclusions:** We conclude that weekly surveillance culture is useful in predicting the pathogen causing septicemia, particularly in septicemia due to GPC, after allogeneic HSCT.

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### HEMORRHAGIC CYSTITIS (HC) IN HEMATOPOIETIC STEM CELL TRANSPLANT (HSCT) RECIPIENTS USING ABLATIVE FLUDARABINE/BUSULFAN (FB) CONDITIONING WITH AND WITHOUT TOTAL BODY IRRADIATION (TBI)

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HC is a recognized complication of HSCT, commonly associated with the use of cyclophosphamide. Ninety one patients underwent non-cyclophosphamide, intravenous FB conditioning for HSCT (autologous [AUTO], n = 11; matched unrelated donor [MUD], n = 42; matched related donor [MRD], n = 38) at our institution from February 2005 to September 2008. The conditioning regimen consisted of fludarabine 50 mg/m$^2$ /day (5 days), busulfan 3.2 mg/kg/day (4 days) with or without TBI (200 cGy x 2). Urine was tested for BK virus using electron microscopy or polymerase chain reaction in most patients who developed HC. Twenty seven patients received FB with TBI (AUTO, n = 4, MUD, n = 7, MRD, n = 16) whereas 64 patients received FB without TBI (AUTO, n = 7, MUD, n = 35, MRD, n = 22). Median age was 48.6 years (range: 22–81); male: female ratio was 1.7:1. 17% patients developed HC within one year of transplantation. 6/27 (22%) of patients who received FB with TBI developed HC whereas 10/64 (16%) of those that received FB alone developed HC. All patients who developed HC had an allogeneic transplant (MUD, n = 8; MRD, n = 8). The median time to presentation was 36 days post transplant (range: 14–67). HC cases were graded as follows: grade 1(n = 4), grade 2(n = 9), grade 3(n = 2), grade 4(n = 1). BKViruria was detected in 12/16 (75%) of patients with HC. Acute graft versus host disease grade 2–4 was seen in 4/16 patients. 1/16 patient required urological intervention (bilateral ureteral stent placement), the rest were treated conservatively. There was no mortality from HC. Addition of TBI to the FB regimen did not increase the incidence of HC (p = 0.29). HC appears to be associated with allogeneic HSCT. HC was mild to moderate (grade 1–3) in most patients. The late onset of HC, in our study, suggests that the causative agent was reactivation of BKV and not direct toxicity from the conditioning regimen, which typically causes early onset HC.

**Patient Characteristics and their Association with HC**

| | Patients (n) | HC, n (%) | P value |
|---|---|---|---|
| AUTO | 11 | 0 | |
| MRD | 38 | 8 (21) | 0.29 |
| MUD | 42 | 8 (19) | |
| Patient age, years | | | |
| ≤48 | 34 | 5 (14) | 0.047 |
| ≥48 | 57 | 11 (19) | |
| Conditioning Regimen | | | |
| FB | 64 | 10 (16) | 0.29 |
| FB +TBI | 27 | 6 (22) | |

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### A PILOT STUDY OF PROPHYLACTIC LIPOSOMAL AMPHOTERICIN B (AMBISOME®) FOLLOWED BY MICAFUNGIN (MYCAMINE®) FOR 100 DAYS TO PREVENT INVASIVE MOLD INFECTIONS FOLLOWING ALLOGENEIC STEM CELL TRANSPLANTATION IN PEDIATRIC RECIPIENTS

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Invasive mold infections (IMI) are a significant cause of infectious mortality post allogeneic stem cell transplant (AlloSCT). We have previously demonstrated the safety and efficacy of liposomal amphotericin B (AMB) for 100 days post AlloSCT in pediatric recipients (Roman/Cairo et al PBC, 2008). Although AMB is safe and effective for prophylaxis against IMI post AlloSCT, its associated nephrotoxicity results in its discontinuation in >10% of patients. Micafungin is a broad spectrum antifungal active against yeasts and molds with a markedly diminished side effect profile. We initiated a pilot study to determine the efficacy and safety of sequential AMB and Micafungin for antifungal prophylaxis in pediatric AlloSCT recipients. Twenty-seven patients were given AMB (3mg/kg/day) IV from d 0–45 and transitioned to Micafungin (1mg/kg/day) IV at d 45 if < grade II acute graft-versus-host-disease (GVHD), until d 100. GVHD prophylaxis was tacrolimus and mycophenolate mofetil (n = 21) for all patients as we have previously described (Osunkwo/Cairo et al BBMT, 2004) except those who received CD-34 selected PBSC (T-depleted) who received tacrolimus only (n = 6). Median age: 8 years (1–23). Gender: 9F, 18M. Diagnoses: 5-ALL, 6-AML, 2-NHL, 1-NBL, 1-HLH, 4-SAA, 1-β-Thal, 1-MAS, 4-SCD, 1-FA, 1-ALD. There were 8 CB donors (7-unrelated, 1-related), 6 UPBSC donors, 11 RBM donors and 2 URBM donors. Median follow-up is 203 days. The median switch day to Micafungin was 47. There were no reported side effects attributable to Micafungin and no one discontinued Micafungin due to toxicity. The probability of developing ≥ grade II acute GVHD and extensive chronic GVHD was 22.2% and 6.3%, respectively. The probability of IMI was zero. There were 2 documented invasive fungal infections (IFI) with Candida Parapsilosis (7.4%) and no Aspergillus IMI. One IFI occurred on AMB prior to switching to Micafungin, the other occurred 51 days after switching to Micafungin. All patients in this cohort are alive at the time of data analysis. Despite a high population of 60% unrelated donors with 25% receiving T-depleted sources, these preliminary results suggest successive antifungal prophylaxis with AMB and Micafungin is tolerable and effective in preventing IMI, especially Aspergillus, during the first 100 days post AlloSCT in pediatric recipients. Larger randomized studies are needed to compare the sequential combination of AMB/Micafungin to other standard antifungal prophylaxis regimens.

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### LOW INFECTIOUS COMPLICATION RATES IN HEMATOPOIETIC STEM CELL TRANSPLANTATION (HSCT) RECIPIENTS: BENEFITS OF A MONTHLY MONITORING SYSTEM

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Life-threatening infections are a common cause of morbidity and mortality in HSCT recipients. We developed a prospective, real-time monitoring system for infection reporting and intervention for our inpatient HSCT unit. All positive blood, urine, sputum, skin, and stool cultures as well as *Clostridium difficile* toxin tests are reviewed monthly. We use an antibiotic algorithm specific to our HSCT patients (pts) and an on-going antibiotic restriction policy has been in place for >25 years. All infections are reviewed to assess the antimicrobial susceptibility patterns of causative infectious agents and to ensure strict compliance with the antibiotic algorithm. We performed 995 consecutive HSCT from 1994–